

## Claims

- 1) Nucleic acid sequence encoding two subunit polypeptides of a urease complex such as expressed by *Helicobacter felis*, said nucleic acid sequence having at least 85 % homology with SEQ ID NO: 1, or a part thereof encoding at least an immunogenic fragment of one of said subunits, said part having a length of at least 40, preferably 45, more preferably 50 nucleotides.
- 2) Nucleic acid sequence according to claim 1, characterised in that it encodes the urease X subunit polypeptide or the urease Y subunit polypeptide.
- 3) Nucleic acid sequence according to claim 1 or 2, characterised in that the sequence has at least 90 %, preferably 94 %, more preferably 97 % homology with SEQ ID NO: 1.
- 4) DNA fragment comprising a nucleic acid sequence according to claims 1-3
- 5) Recombinant DNA molecule comprising a nucleic acid sequence according to claims 1-3 or a DNA fragment according to claim 4, under the control of a functionally linked promoter.
- 6) Live recombinant carrier comprising a recombinant DNA molecule according to claim 5
- 7) Host cell comprising a nucleic acid sequence according to claims 1-3, a DNA fragment according to claim 4, a recombinant DNA molecule according to claim 5 or a live recombinant carrier according to claim 6.
- 8) *Helicobacter felis* urease X subunit polypeptide, said polypeptide having an amino acid sequence that is at least 85 % homologous to SEQ ID NO: 2 or an immunogenic fragment of said polypeptide with a length of at least 40, preferably 45, more preferably 50 amino acids said immunogenic fragment being capable of inducing an immune response against ureaseXY.
- 9) Polypeptide according to claim 8, having a sequence homology of at least 90 %, preferably 94 %, more preferably 97 % homology to SEQ ID NO: 2, or an immunogenic fragment of said polypeptide capable of inducing an immune response against ureaseXY.
- 10) *Helicobacter felis* urease Y subunit polypeptide, said polypeptide having an amino acid sequence that is at least 85 % homologous to SEQ ID NO: 3 or an immunogenic fragment of said polypeptide with a length of at least 40, preferably 45, more preferably 50 amino acids said immunogenic fragment being capable of inducing an immune response against ureaseXY.
- 11) Polypeptide according to claim 10, having a sequence homology of at least 90 %, preferably 94 %, more preferably 97 % homology to SEQ ID NO: 3, or an immunogenic fragment of said polypeptide capable of inducing an immune response

against ureaseXY.

- 12) Polypeptide according to claims 8-11 for use in a vaccine
- 13) Use of a polypeptide according to claims 8-11 in the manufacturing of a vaccine for combating *Helicobacter felis* infections.
- 14) Vaccine for combating *Helicobacter felis* infections, characterised in that it comprises a nucleic acid sequence according to claims 1-3, a DNA fragment according to claim 4, a recombinant DNA molecule according to claim 5, a live recombinant carrier according to claim 6, a host cell according to claim 7 or a polypeptide according to claims 8-11, and a pharmaceutically acceptable carrier.
- 15) Vaccine according to claim 14, characterised in that it comprises an adjuvant.
- 16) Vaccine according to claim 14 or 15, characterised in that it comprises an additional antigen derived from a virus or micro-organism pathogenic to mammals or genetic information encoding said antigen.
- 17) Vaccine according to claim 16, characterised in that said virus or micro-organism pathogenic to mammals is selected from the group of Feline Infectious Peritonitis virus, Feline Immune deficiency virus, Canine and Feline Parvovirus, Distemper virus, Adenovirus, Calicivirus, *Bordetella bronchiseptica*, *Borrelia burgdorferi*, *Leptospira interrogans*, *Chlamydia* and *Bartonella henseli*.
- 18) Vaccine for combating *Helicobacter felis* infections, characterised in that it comprises antibodies against a polypeptide according to claims 8-11.
- 19) Method for the preparation of a vaccine according to claims 14-17, said method comprising the admixing of a polypeptide according to claims 8-11 and a pharmaceutically acceptable carrier.
- 20) Diagnostic test for the detection of *Helicobacter felis* specific DNA characterised in that the test comprises a nucleic acid sequence according to claims 1-3, or a fragment thereof.
- 21) Diagnostic test for the detection of antibodies against *Helicobacter felis*, characterised in that said test comprises a polypeptide or a fragment thereof as described in claims 8-11.
- 22) Diagnostic test for the detection of antigenic material of *Helicobacter felis*, characterised in that said test comprises antibodies against a polypeptide or a fragment thereof as described in claims 8-11.